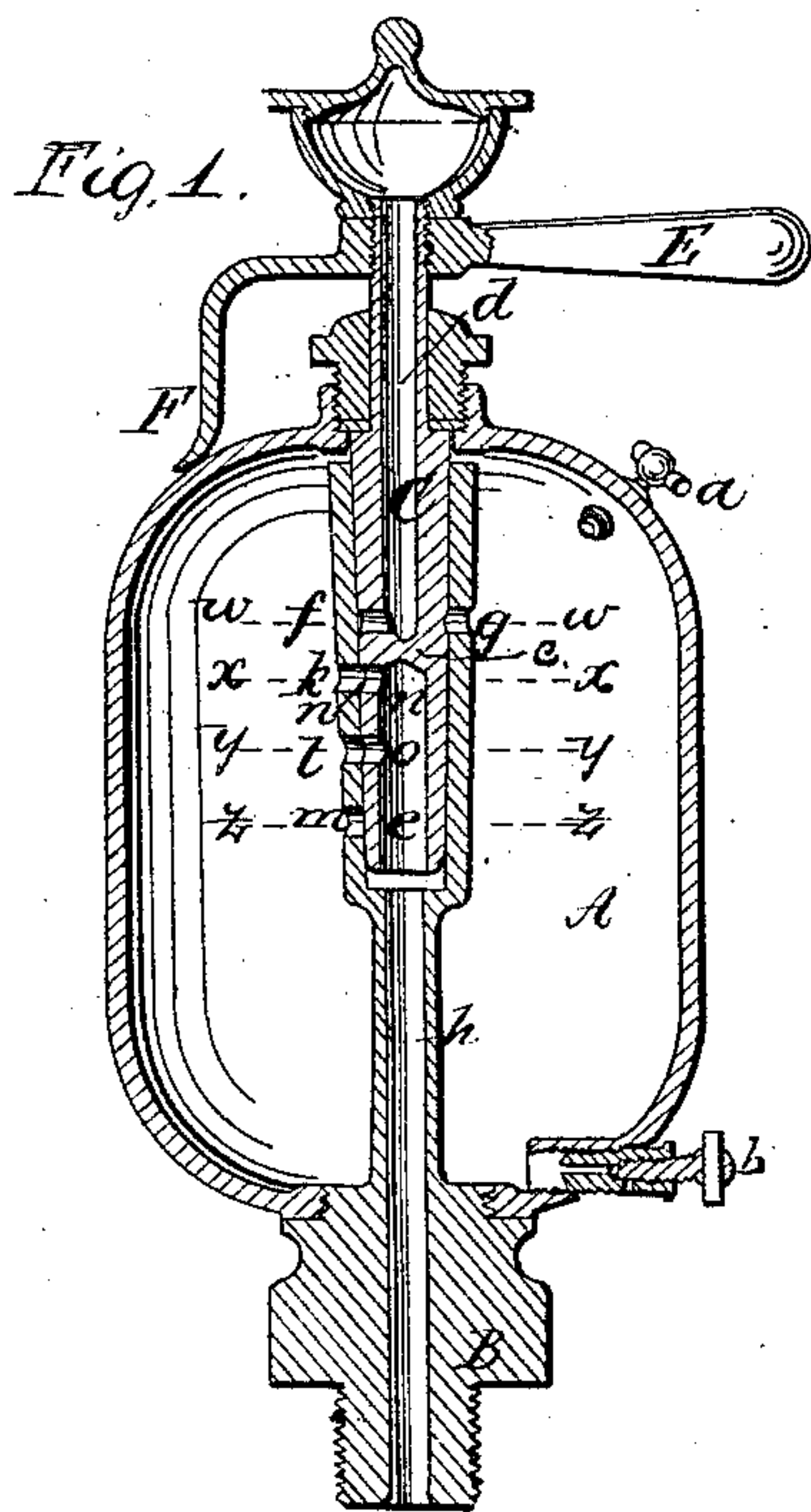


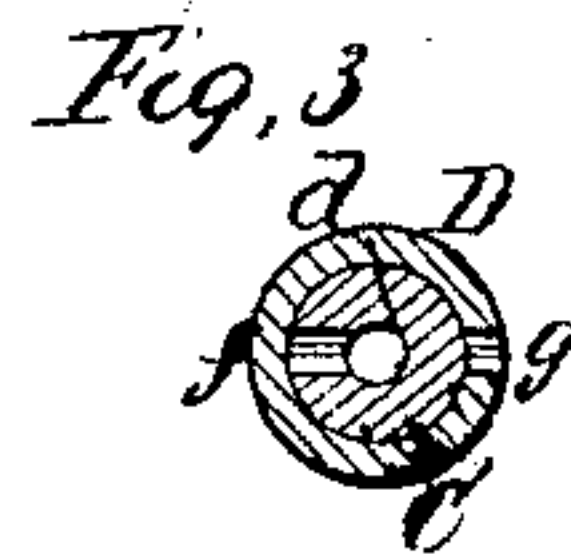
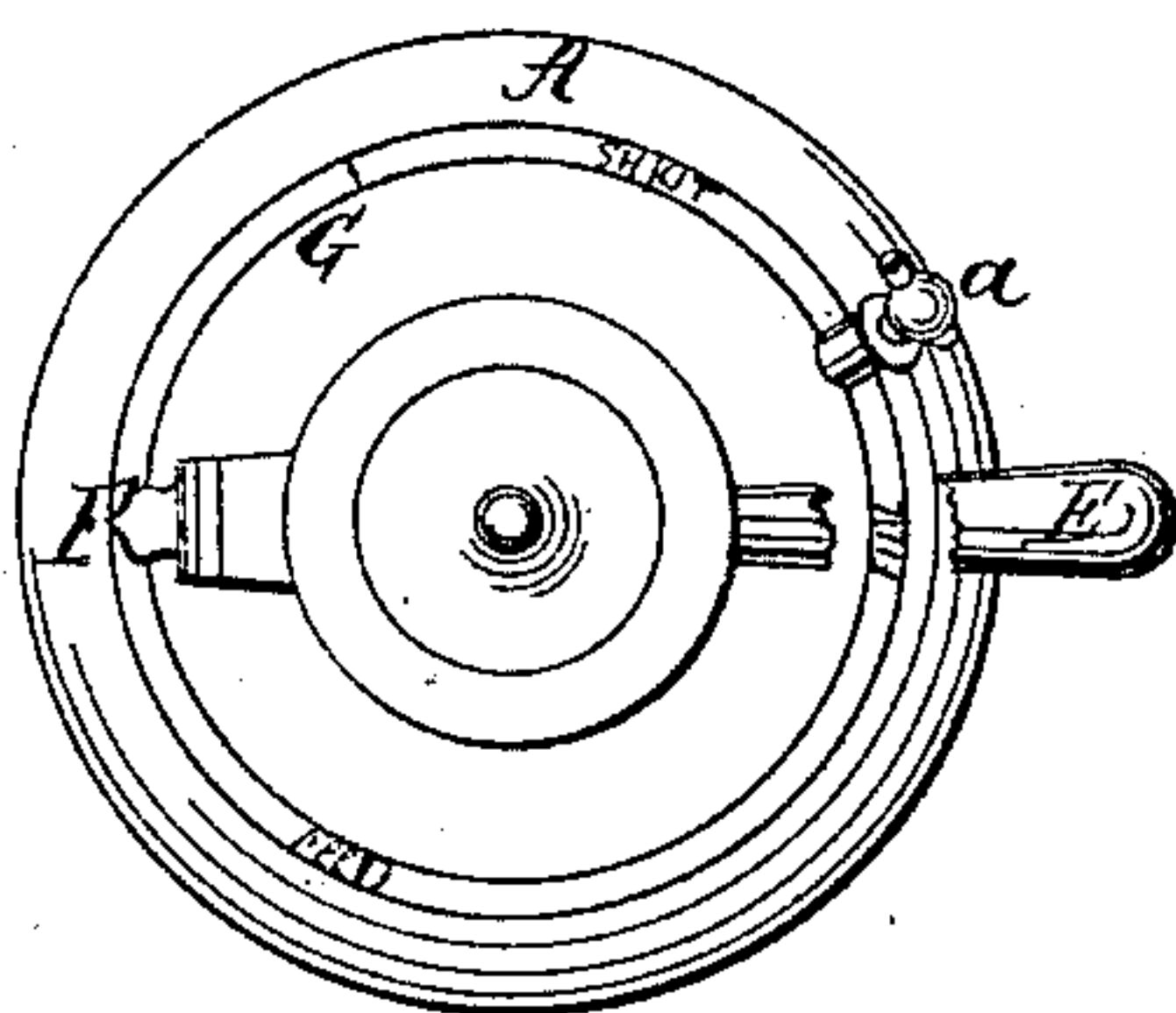
J. ROSS.  
LUBRICATOR FOR STEAM ENGINES.

No. 78,540

Patented June 2, 1868



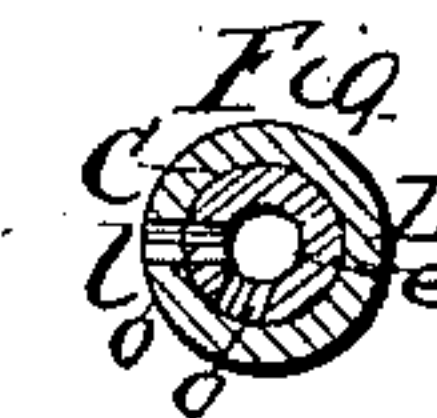
*Fig. 2*



*Fig. 4*



*Fig. 5*



Witnesses;  
A. Heller,  
E. P. Driscoll

Inventor,  
James Ross.

# United States Patent Office.

JAMES ROSS, OF NORTH CAMBRIDGE, MASSACHUSETTS, ASSIGNOR TO HIMSELF AND FERDINAND FAIRBANKS, OF NEW YORK.

*Letters Patent No. 78,540, dated June 2, 1868.*

## IMPROVED LUBRICATOR FOR STEAM-ENGINES.

*The Schedule referred to in these Letters Patent and making part of the same.*

### TO ALL WHOM IT MAY CONCERN:

Be it known that I, JAMES ROSS, of North Cambridge, in the county of Middlesex, and State of Massachusetts, have invented a new and useful Improvement in Lubricators, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing forming part of this specification, and in which—

Figure 1 represents a vertical central section of a lubricator constructed in accordance with my improvement.

Figure 2, a plan of the same.

Figure 3, a transverse section of the cock-portion of the lubricator taken as denoted by the line *ww* in fig. 1.

Figure 4, a similar view of the same through the line *xx* in said fig. 1.

Figure 5, a like view taken as indicated by the line *yy*, and

Figure 6 an additional similar view of the same through the line *zz* in fig. 1.

Similar letters of reference denote corresponding parts throughout the several figures.

My improvement relates to that description of lubricators which are used for oiling steam-cylinders or other vessels or bodies exposed to steam-pressure, and in which a cock or valve is used, constructed to shut off the steam-passage, and to open communication with the feed-inlet when it is required to charge the lubricator with oil, but which on being set or turned to lubricate, reverses the open and closed conditions of said passages, for the purpose of establishing an equilibrium of pressure above and below the oil to secure its flow; also, in which the passage of the oil is effected by displacement of it from the reservoir or cup, by the water resulting from condensation of the steam admitted to said cup on opening its connection with the steam-cylinder.

My invention in such relation consists in a peculiar construction of the cock and its seat or case, whereby the passage of oil through the lubricator may be increased or diminished, and quickened or retarded, by increasing or diminishing the surface of the cup exposed to condensation of the steam through varying the altitude, by the turning of the cock, at which the steam is admitted to the cup.

Referring to the accompanying drawing, A represents the oil-cup or reservoir of the lubricator; B, its nozzle, by which it may be connected with, say, the steam-cylinder of an engine; and *a b*, the usual blow-off air and condensed steam or water-vents.

C is the cock or valve, working in a seat, D. This cock is divided, as at *c*, so as to form upper and lower passages *d e*, the one of which, *d*, serves as a feed-way to supply the cup A with oil through side apertures *f* and *g*, made in the cock and its seat or case, and the other one, *e*, of which answers to pass steam into the cup, and oil therefrom to the cylinder, by its connection with or arrangement over a tubular extension, *h*, to the nozzle, running up into the cup, and side apertures or openings *k l m* and *n o r*, made in the cock and its seat.

It may here be observed that while in the drawing there are shown three tiers or sets of openings, *k l m* and *n o r*, one above the other, any other desired number may be adopted, but it will suffice here to describe the invention under a triple arrangement of such apertures.

E is the handle, by which the cock C is turned or adjusted, and F a pointer connected therewith, for indicating, on a dial, G, the position of the cock, and whereby the latter may be set as required.

The tiers or sets of openings *k l m* in the seat D are of a single character, that is, only one of each; while the tiers or set of apertures *n o r* in the cock C are varied in number; thus there are three openings *n*, two openings *o*, and one aperture *r*, such tiers of openings corresponding to or being in line with the apertures *k l m* in the seat, and so pitched or arranged as that the cock may be turned to put only one of the openings *n* into communication with the aperture *k*, and the other openings *o* and *r* in closed relationship to the openings *l m*, or one of the apertures *n* and *o* into open communication with the openings *k* and *l*; or, again the cock be further turned, to put one of the openings *n* and *o* and aperture *r* into open connection with their respective seat-openings *k*, *l*, and *m*, the opening, *d*, in all such movements being in closed relationship to the aperture *g*, with which it is only brought in line when it is required to charge the reservoir A with oil, and when so brought in line the other openings, *n*, *o*, and *r*, in the cock are closed or out of line with their seat-openings *k l m*.



From this description, though the number of cock or valve-openings in a tier or number of tiers may be changed, it will be perceived that after the cup or reservoir A has been charged with oil to a suitable depth or elevation, accordingly as the cock is turned to admit steam to said reservoir or cup from the cylinder, at the different altitudes *k*, *l*, or *m*, by or through the apertures *n*, *o*, and *r*, will the surface of the cup exposed to condensation of the steam be increased or diminished, and the oil be more or less displaced by the increased or diminished formation of water in the cup, so as to induce a greater or less, or quicker or slower flow of oil through the seat and its cock down to the steam-cylinder.

What is here claimed, and desired to be secured by Letters Patent, is—

The construction, in a lubricator of the character herein specified, of the cock C and its seat D, with their openings arranged substantially as described, whereby provision is made for varying the extent of steam-condensing surface in the oil-cup or reservoir of the lubricator, and thereby regulating the flow of oil or grease, essentially as herein set forth.

JAMES ROSS.

Witnesses·

EDWD. G. TRACY,

A. LE CLERC.